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EDWARDS ANGELL PALMER & DODGE LLP				
P.O. BOX 55874			DIAZ, JOSE	
BOSTON, MA 02205			ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/593,630	IDE ET AL.	
	Examiner	Art Unit	
	JOSE M. DIAZ	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 13 April 2010.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 2-7,9-11,13 and 15-17 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) 6,8 and 9 is/are allowed.
 6) Claim(s) 2-5,7,10,11,13 and 15-17 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>02-18-10, 05-20-10, 06-16-10</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: _____ .

DETAILED ACTION

Response to Amendment

The Amendment, filed on 04/13/2010, has been entered and acknowledged by the Examiner.

Cancellation of claim 14 has been entered.

Claims 2-11 and 15-17 are pending in the instant application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

a. A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Sugiura et al (20040012980), hereinafter Sugiura**, in view of **Kido et al (20030189401), hereinafter Kido**.

Regarding **claim 2**, Sugiura clearly shows and discloses an organic light emitting device having an emission layer (4) between an anode (5) and a cathode (12), wherein the organic light emitting device has, at least either inside or outside the device, a light scattering means for scattering light emitted from the emission layer, wherein the light scattering means is made up by: forming a first electrode (5) of the anode or the cathode by an optically-transparent electrode to mount the first electrode on an

optically-transparent substrate (glass substrate 1, ¶ [114]); and forming a second electrode (12) of the anode or the cathode by a light-scattering and light-reflective electrode (12) (figs. 1-3, ¶s [0101], [0114]).

However, Sugiura fails to exemplify a plurality of emission layers being separated from each other by an equipotential surface forming layer or a charge generating layer.

In the same field of endeavor, Kido clearly shows and discloses a plurality of emission layers (3-1, 3-2, 3-3) being separated from each other by an equipotential surface forming layer or a charge generating layer (4-1, 4-2) (fig. 8, ¶ [0175]), in order to effectively and stably provide a device structure capable of achieving a long operational life time with a light-emission at a higher luminance.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a plurality of emission layers being separated from each other by an equipotential surface forming layer or a charge generating layer as taught by Kido in the device of Sugiura, in order to effectively and stably provide a device structure capable of achieving a long operational life time with a light-emission at a higher luminance.

Regarding **claim 3**, Sugiura clearly shows and discloses an organic light emitting device having an emission layer (4) between an anode and a cathode, wherein the organic light emitting device has, at least either inside or outside the device, a light scattering means for scattering light emitted from the emission layer, wherein the light scattering means is made up by: forming each of the anode (5) and the cathode (13) by an optically-transparent electrode to mount a first electrode of the anode or the cathode

on an optically-transparent substrate (glass substrate 1); mounting the emission layer on the first electrode; mounting a second electrode of the anode or the cathode on the emission layer and providing a light-scattering and light-reflective element (14) on the second electrode (fig. 5, ¶s [0101], [0114], [0125]).

However, Sugiura fails to exemplify a plurality of emission layers being separated from each other by an equipotential surface forming layer or a charge generating layer.

In the same field of endeavor, Kido clearly shows and discloses a plurality of emission layers (3-1, 3-2, 3-3) being separated from each other by an equipotential surface forming layer or a charge generating layer (4-1, 4-2) (fig. 8, ¶ [0175]), in order to effectively and stably provide a device structure capable of achieving a long operational life time with a light-emission at a higher luminance.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a plurality of emission layers being separated from each other by an equipotential surface forming layer or a charge generating layer as taught by Kido in the device of Sugiura, in order to effectively and stably provide a device structure capable of achieving a long operational life time with a light-emission at a higher luminance.

Regarding **claim 4**, Sugiura clearly shows and discloses an organic light emitting device having an emission layer (4) between an anode and a cathode, wherein the organic light emitting device has, at least either inside or outside the device, a light scattering means for scattering light emitted from the emission layer, wherein the light scattering means is made up by: forming a first electrode of the anode or the cathode

by a light-scattering and optically-transparent electrode (5) to mount the first electrode on an optically-transparent substrate (glass substrate 1 ¶ [114]); and forming a second electrode (2, ¶ [101]) of the anode or the cathode by a light-reflective electrode (fig. 6, ¶s [0101], [0114], [0131]).

However, Sugiura fails to exemplify a plurality of emission layers being separated from each other by an equipotential surface forming layer or a charge generating layer.

In the same field of endeavor, Kido clearly shows and discloses a plurality of emission layers (3-1, 3-2, 3-3) being separated from each other by an equipotential surface forming layer or a charge generating layer (4-1, 4-2) (fig. 8, ¶ [0175]), in order to effectively and stably provide a device structure capable of achieving a long operational life time with a light-emission at a higher luminance.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a plurality of emission layers being separated from each other by an equipotential surface forming layer or a charge generating layer as taught by Kido in the device of Sugiura, in order to effectively and stably provide a device structure capable of achieving a long operational life time with a light-emission at a higher luminance.

Regarding **claim 5**, Sugiura clearly shows and discloses an organic light emitting device having an emission layer (4) between an anode and a cathode, wherein the organic light emitting device has, at least either inside or outside the device, a light scattering means for scattering light emitted from the emission layer, wherein the light scattering means is made up by: providing a light-scattering and optically-transparent

element (16) on an optically-transparent substrate (glass substrate 1 ¶ [114]); forming a first electrode of the anode or the cathode by an optically-transparent electrode (5) to mount the first electrode on the element (16); and forming a second electrode of the anode or the cathode by a light-reflective electrode (2, ¶ [101]) (fig. 6, ¶s [0101], [0114], [0131]).

However, Sugiura fails to exemplify a plurality of emission layers being separated from each other by an equipotential surface forming layer or a charge generating layer.

In the same field of endeavor, Kido clearly shows and discloses a plurality of emission layers (3-1, 3-2, 3-3) being separated from each other by an equipotential surface forming layer or a charge generating layer (4-1, 4-2) (fig. 8, ¶ [0175]), in order to effectively and stably provide a device structure capable of achieving a long operational life time with a light-emission at a higher luminance.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a plurality of emission layers being separated from each other by an equipotential surface forming layer or a charge generating layer as taught by Kido in the device of Sugiura, in order to effectively and stably provide a device structure capable of achieving a long operational life time with a light-emission at a higher luminance.

Claims 7, 10-11 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Senbonmatsu (20030102801)**, **Senbonmatsu hereinafter**, in view of **Kido et al (20030189401)**, **hereinafter Kido**.

Regarding **claim 7**, Senbonmatsu clearly shows and discloses an organic light emitting device having an emission layer (110) between an anode (106) and a cathode (115), wherein both the anode and the cathode are formed by optically-transparent electrodes a first electrode of the anode or the cathode being provided on an optically-transparent substrate (102), the emission layer being provided on the first electrode, a second electrode of the anode or the cathode being provided on the emission layer, an optical spacer (102) being provided on the second electrode, a light reflective element (114) being provided on the optical spacer a distance between the light reflective element and the emission layer being in the range of about $1\mu\text{m}$ to 1mm by means of the optical spacer so as to be set to a distance where an angle dependency of light emission brightness and light emission color can be reduced (fig. 18, Table 5). It is to be noted that the claimed structure from FIG. 10 of the instant application, wherein the substrate “10” also serve as the optical spacer “11”, is analogous to Senbonmatsu’s embodiment of figure 18. Table 5 Example 14 discloses that the substrate/optical-spacer (102) can have a thickness of $0.1\text{mm} = 100\mu\text{m}$ and the transparent electrode (106) can have a thickness of $100\text{nm} = 0.1\mu\text{m}$; therefore the distance between the light reflective element (114) and the emission layer (110) is $100.1\mu\text{m}$.

However, Senbonmatsu fails to exemplify a plurality of emission layers being separated from each other by an equipotential surface forming layer or a charge generating layer.

In the same field of endeavor, Kido clearly shows and discloses a plurality of emission layers (3-1, 3-2, 3-3) being separated from each other by an equipotential

surface forming layer or a charge generating layer (4-1, 4-2) (fig. 8, ¶ [0175]), in order to effectively and stably provide a device structure capable of achieving a long operational life time with a light-emission at a higher luminance.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a plurality of emission layers being separated from each other by an equipotential surface forming layer or a charge generating layer as taught by Kido in the device of Senbonmatsu, in order to effectively and stably provide a device structure capable of achieving a long operational life time with a light-emission at a higher luminance.

It is to be noted that the combination of Senbonmatsu and Kido meets all the structure limitations of the organic light emitting device. The limitation "so as to be set to a distance where an angle dependency of light emission brightness and light emission color can be reduced" is a functional statement. Therefore the in the combination of Senbonmatsu and Kido distance between the light reflective element and the emission layers can be adapt to perform the claimed function, i.e. to reduce an angle dependency of light emission brightness and light emission color.

The following is a quotation of the MPEP 2114

APPARATUS CLAIMS MUST BE STRUCTURALLY DISTINGUISHABLE FROM THE PRIOR ART

>While features of an apparatus may be recited either structurally or functionally, claims< directed to >an< apparatus must be distinguished from the prior art in terms of structure rather than function. >In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d

1429,1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference); see also *In re Swinehart*, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971); *< In re Danly*, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). “[A]pparatus claims cover what a device is, not what a device does.” *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original).

Regarding **claim 10**, in the combination of Senbonmatsu and Kido, Kido clearly shows and discloses that the plurality of emission layers comprises emission layers (3-1, 3-2, 3-3) of at least two different emission colors (fig. 8, ¶ [0207]).

Same rationale to combine from the rejection of claim 7 applies.

Regarding **claim 11**, in the combination of Senbonmatsu and Kido, Kido clearly shows and discloses that the emission color of the organic light emitting device is white (fig. 8, ¶ [0207], claim 29).

Same rationale to combine from the rejection of claim 7 applies.

Regarding **claim 15**, Senbonmatsu clearly shows and discloses an organic light emitting device having an emission layer (110) between an anode (106) and a cathode (115), wherein both the anode and the cathode are formed by optically-transparent electrodes, any one of the anode and the cathode being provided on a first surface of an optically-transparent substrate (102), a light reflective element (114) being provided on a second surface of the substrate as an optical spacer, a distance between the light

reflective element and the emission layer being in the range of about $1\mu\text{m}$ to 1mm by means of the optical spacer so as to be set to a distance where an angle dependency of light emission brightness and light emission color can be reduced (fig. 18, Table 5). It is to be noted that the claimed structure from FIG. 10 of the instant application, wherein the substrate "10" also serve as the optical spacer "11", is analogous to Senbonmatsu's embodiment of figure 18. Table 5 Example 14 discloses that the substrate/optical-spacer (102) can have a thickness of $0.1\text{mm} = 100\mu\text{m}$ and the transparent electrode (106) can have a thickness of $100\text{nm} = 0.1\mu\text{m}$; therefore the distance between the light reflective element (114) and the emission layer (110) is $100.1\mu\text{m}$.

However, Senbonmatsu fails to exemplify a plurality of emission layers being separated from each other by an equipotential surface forming layer or a charge generating layer.

In the same field of endeavor, Kido clearly shows and discloses a plurality of emission layers (3-1, 3-2, 3-3) being separated from each other by an equipotential surface forming layer or a charge generating layer (4-1, 4-2) (fig. 8, ¶ [0175]), in order to effectively and stably provide a device structure capable of achieving a long operational life time with a light-emission at a higher luminance.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a plurality of emission layers being separated from each other by an equipotential surface forming layer or a charge generating layer as taught by Kido in the device of Senbonmatsu, in order to effectively

and stably provide a device structure capable of achieving a long operational life time with a light-emission at a higher luminance.

It is to be noted that the combination of Senbonmatsu and Kido meets all the structure limitations of the organic light emitting device. The limitation " so as to be set to a distance where an angle dependency of light emission brightness and light emission color can be reduced" is a functional statement. Therefore the in the combination of Senbonmatsu and Kido distance between the light reflective element and the emission layers can be adapt to perform the claimed function, i.e. to reduce an angle dependency of light emission brightness and light emission color.

The following is a quotation of the MPEP 2114

APPARATUS CLAIMS MUST BE STRUCTURALLY DISTINGUISHABLE FROM THE
PRIOR ART

>While features of an apparatus may be recited either structurally or functionally, claims< directed to >an< apparatus must be distinguished from the prior art in terms of structure rather than function. >In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429,1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference); see also In re Swinehart, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971);< In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "[A]pparatus claims cover what a device is, not what a device does." Hewlett-Packard

Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original).

Regarding **claim 16**, in the combination of Senbonmatsu and Kido, Kido clearly shows and discloses that the plurality of emission layers comprises emission layers (3-1, 3-2, 3-3) of at least two different emission colors (fig. 8, ¶ [0207]).

Same rationale to combine from the rejection of claim 15 applies.

Claims 13 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Senbonmatsu (20030102801)**, **Senbonmatsu hereinafter**, in view of **Kido et al (20030189401)**, **hereinafter Kido**, and further in view of **Tyan et al (20040061136)**, **hereinafter Tyan**.

Regarding **claim 13**, in the combination of Senbonmatsu and Kido discloses the claimed invention.

However, the combination of Senbonmatsu and Kido fails to exemplify that the light reflective element is a multilayered film of a dielectric.

In the same field of endeavor, Tyan clearly shows and discloses a light reflecting layer (composed by 26, 24, and 12) that is a multilayered film (fig. 11, ¶ [50]), in order to enhanced light extraction from device.

However, in the combination of Senbonmatsu, Kido and Tyan, Tyan is silent about the multilayered film been formed of a dielectric material.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the light reflecting multilayer film of a dielectric material,

since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. Evidence of a dielectric materials used as a light reflecting layer can be found in US 20040041516 A1, ¶ [0004] “an insulating (dielectric) layer, i.e., a light reflecting layer” and in Sugiura fig. 5, ¶ [0126].

Regarding **claim 17**, in the combination of Senbonmatsu and Kido discloses the claimed invention.

However, the combination of Senbonmatsu and Kido fails to exemplify that the light reflective element is a multilayered film of a dielectric.

In the same field of endeavor, Tyan clearly shows and discloses a light reflecting layer (composed by 26, 24, and 12) that is a multilayered film (fig. 11, ¶ [50]), in order to enhanced light extraction from device.

However, in the combination of Senbonmatsu, Kido and Tyan, Tyan is silent about the multilayered film been formed of a dielectric material.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the light reflecting multilayer film of a dielectric material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. Evidence of a dielectric materials used as a light reflecting layer can be found in US 20040041516 A1, ¶ [0004] “an insulating (dielectric) layer, i.e., a light reflecting layer” and in Sugiura fig. 5, ¶ [0126].

Allowable Subject Matter

Claims 6 and 8-9 are allowed.

The reasons for allowance were stated on the previous Office action.

Response to Arguments

Applicant's arguments regarding claims 2-5, 7, 10-11, 13 and 15-17 have been fully considered but they are not persuasive. Examiner most respectfully disagrees with Applicants' arguments.

Regarding the argument with respect to claims 2-5; Applicants' basically argues that in the combination of Sugiura and Kido, Sugiura fails to provide an optically-transparent electrode as a first electrode mounted on an optically-transparent and a light-scattering and light-reflective electrode as a second electrode. It is to note that all the device components, i.e. transparent electrode(s), light-scattering/reflective element, etc., are on the substrate (1); the recitation of "to mount the first electrode on an optically-transparent substrate" does not mean that the electrode is in direct contact with the substrate, there can be an element therebetween, or the device components can be formed on a different order of precedence, since the claim do not limit the structure to be in a specific order. Thus, Sugiura does teach all structure limitation argued by Applicants.

Regarding the argument with respects to claim 7; on the claim either one of the anode or the cathode can be the second electrode on which the optical spacer can be provided on. Therefore, in Senbonmatsu, making reference to fig. 18, substrate (102)

provides an optical space between electrode (106) and the light reflecting element (114), and as stated above the distance the light reflecting element and the emission layer falls within the claimed range.

With respects to the arguments regarding claims 13 and 17; in Senbonmatsu, the reflective elements (114) have no through holes.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOSE M. DIAZ whose telephone number is (571)272-9822. The examiner can normally be reached on 7:00 - 5:00 EST Monday-Thursday; Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/José M. Díaz/
Examiner, Art Unit 2879

/Sikha Roy/
Primary Examiner, Art Unit 2879